Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1-28 are pending in the application, with 1, 27 and 28 being the independent claims. Claims 1, 6 and 28 are amended. These changes are believed to introduce no new matter, and their entry is respectfully requested.

In the Office Action dated December 19, 2002, claim 6 stands rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Claims 1, 2, 7-13, 15, 18-20, 22, 24, 25, 27 and 28 stand rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by, or, in the alternative, under 35 U.S.C. § 103(a) as being allegedly obvious over *Pautsch*, Published U.S. Patent Application No. 2002/0172007 A1. Claims 1, 7-11 and 28 stand rejected as being allegedly anticipated by *Kieda et al.*, U.S. Patent No. 5,021,924. Claims 3-6, 14, 16, 17, 21, 23 and 26 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Pautsch* taken with *Khandros*, U.S. Patent No. 5,476,211 or *Khandros et al.*, U.S. Patent No. 5,917,707.

Based on the above amendment and the following remarks, Applicant respectfully requests that the Examiner reconsider all outstanding objections and rejections and that they be withdrawn.

Rejections under 35 U.S.C. § 112

Claim 6 stands rejected under 35 U.S.C. § 112, second paragraph as being indefinite due to the use of the word "multipart". Applicant hereby amends claim 6 to recite the use of multilayer lithographic springs. Support for the language on this amendment may be found, *e.g.*, in paragraphs [0069]-[0072] of the present specification, which discusses the use of multiple lithographic layers to form springs. Accordingly, Applicant respectfully requests that the rejection under 35 U.S.C. § 112, second paragraph be withdrawn.

Rejections under 35 U.S.C. § 102/103 based on Pautsch

A number of claims stand rejected as being allegedly anticipated by *Pautsch*, or, alternatively, as being obvious over *Pautsch*. *Pautsch* has a filing date of May 16, 2001. Applicant hereby submits a Declaration under 37 C.F.R. 1.131 by the inventor of the present application, Charles A. Miller, declaring that the date of the conception of the invention is at least prior to May 16, 2001, and in fact, is at least as early as January 25, 2001. In support of the Declaration under Rule 131, Applicant also submits the invention disclosure form submitted by the inventor on January 25, 2001 as Exhibit A to the Miller Declaration.

Applicant also submits a Declaration under 37 C.F.R. 1.131 by the undersigned, Michael V. Messinger, who was also the prosecuting attorney of this Application prior to its filing on December 27, 2001. Accompanying the Messinger Declaration is further

evidence of the continued work on the Application between May 16, 2001 and leading up to its filing on December 27, 2001. The compilation of time entries having dates from prior to May 16, 2001 through December 27, 2001 are attached as Exhibit A to the Messinger Declaration. Copies of correspondence with FormFactor, Inc. (the assignee of this application, hereafter "FormFactor") are attached as Exhibit B to the Messinger Declaration.

Specifically, as shown in Exhibit B, on June 29, 2001, a set of comments on the initial draft was received from FormFactor.

Further, as shown in Exhibit B, on July 13, 2001, a set of drawings was forwarded to FormFactor.

Further, as shown in Exhibit B, on July 23, 2001, another draft of the application was forwarded to FormFactor.

Further, as shown in Exhibit B, on August 1, 2001, another set of comments was received from FormFactor.

Further, as shown in Exhibit B, on August 7, 2001, a missing page 7 of the application was received from FormFactor.

Further, as shown in Exhibit B, on August 15, 2001, another draft of the application was forwarded to FormFactor.

Further, as shown in Exhibit B, on October 19, 2001, additional comments were received from FormFactor.

Further, as shown in Exhibit B, on November 7, 2001, another draft of the application was forwarded to FormFactor.

Further, as shown in Exhibit B, on November 30, 2001, additional comments were received from FormFactor.

Further, as shown in Exhibit B, on December 13, 2001, inventor residence information was received from FormFactor.

Further, as shown in Exhibit B, on December 14, 2001, a final draft of the application was forwarded to FormFactor.

Further, as shown in Exhibit B, on December 21, 2001, executed documents from the inventor of the application were received.

Having demonstrated a date of invention prior to May 16, 2001 (the filing date of *Pautsch*), as well as diligence in constructive reduction to practice of the invention leading up to the filing of the present application on December 27, 2001, Applicant believes that the *Pautsch* reference has been overcome. Accordingly, Applicant respectfully requests that the rejections under 35 U.S.C. § 102(e)/35 U.S.C. § 103(a) based on *Pautsch* be withdrawn.

Rejections under 35 U.S.C. § 102 based on Kieda et al.

Claims 1, 7-11 and 28 stand rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by *Kieda et al.* Independent claims 1 and 28 have been amended to recite the use of a compliant interconnect to mount the die within a package. This aspect of the invention of claims 1 and 28 is not disclosed by *Kieda et al. Kieda et al.* teaches the use

of solder balls to attach a die to a substrate. See, e.g., FIG. 1 of *Kieda et al.* See also discussion at column 5, lines 23-30 of *Kieda et al.* The "interconnects" (solder balls) of *Kieda et al.* are not compliant as that term is understood in the art. Rather, the solder balls of *Kieda et al.* are rigid structures that have no compliance or flexibility. Therefore, claims 1 and 28, as amended, recite at least this aspect which is not disclosed in the cited reference, and are allowable over the cited reference. Accordingly, Applicant respectfully requests that the rejection under 35 U.S.C. § 102(b) based on *Kieda et al.* be withdrawn.

Rejections under 35 U.S.C. § 103

Claims 3-6, 14, 16, 17, 21, 23 and 26 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over *Pautsch* taken with *Khandros* ('211 or '707). As discussed above, Applicant overcame the rejections based on Pautsch with the attached Rule 1.131 Declarations. Accordingly, Applicant respectfully requests that the rejections under 35 U.S.C. 103(a) based on *Pautsch* in combination with *Khandros* '211 or '701 be withdrawn.

Conclusion

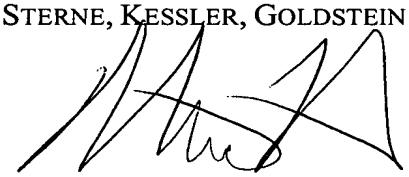
All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be

withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



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Version with markings to show changes made

In the claims:

Please amend claims 1, 6 and 28 as follows:

1. (Amended) A cooling assembly comprising:

an electronic package having a cavity;

at least one die with active electronic components [located in] mounted using compliant interconnects within the cavity; and

at least one coolant port that allows a coolant to enter the cavity and directly cool the active electronic components of each die.

6. (Amended) The cooling assembly of claim 5, wherein said lithographic springs comprise [multipart] multilayer lithographic springs.

28. (Amended) A cooling assembly, comprising:

means for sealing at least one die with active electronic components in a package the die mounted within this package using compliant interconnects; and

means for circulating coolant through the package during operation of the active electronic components to reduce thermal variations across each die.